

Breeding Biology and Management of the Great Lakes Piping Plover Population, 2001

A Proposal for Research

Toward completion of contracts with:

Michigan Department of Natural Resources

Great Lakes Protection Fund – US Fish & Wildlife Service, East Lansing Field Office

USGS – BRD and US Fish and Wildlife Service, East Lansing Field Office

OBJECTIVES are to:

1. estimate the number of Piping Plovers breeding in Michigan,
2. determine breeding chronology of nesting Piping Plovers,
3. estimate reproductive success and document cases of nest failure,
4. provide protection from predators and human disturbance to all plover nesting areas,
5. continue banding adult and juvenile plovers for collection of life-history data, and
6. recover eggs from abandoned nests and captive-rear hatched chicks for release to the wild
7. collect feather samples to assist with population wide genetic analyses of all Piping Plovers

JUSTIFICATION AND BACKGROUND

The Great Lakes population of the Piping Plover (*Charadrius melodus*) was given federal endangered status in 1986 (USFWS 1985). At that time, the only remaining breeding areas in the Great Lakes region were located within the state of Michigan (Haig et al. 1988). Historically plovers have nested in the lower peninsula of Michigan in Benzie, Charelvoix, Emmet, Leelanau, and Cheboygan counties (Cuthbert and Powell 1987, 1988, 1989, Lambert and Ratcliff 1981, Russell 1983, Wolinski 1989, Wemmer et al. 1995, 1996). In the upper peninsula, nests have been located in Mackinac, Chippewa, Luce and Alger counties (Lambert and Ratcliff 1981). Recently there have been multiple examples of range expansion despite only small apparent increases in the breeding population size. For example, in 1998, two plovers that hatched at different Michigan sites dispersed to Long Island (Ashland County, Wisconsin), paired, successfully fledged young, and re-expanded the range of the Great Lakes population (Stucker et al. 1998). Also, between 1983 and the present, the number of pairs nesting in the Sleeping Bear Dunes region (e.g. Benzie, Leelanau counties) increased from 1 to 8 pairs, now representing 26% of the population. Finally, in 2000, a pair of Piping Plovers nested on Lake Huron in Cheboygan

County, MI at The Nature Conservancy's Grass Bay preserve, which was the first record of plover breeding at this location and first breeding on Lake Huron since 1989.

Research during the past nine years has demonstrated the importance of intensive monitoring and protection of plover nesting areas. Use of exclosures significantly reduced egg loss to predation (Wolinski 1988, Rimmer and Deblinger 1990). Communication among researchers and the public has promoted public awareness of nesting Piping Plovers. Continued intensive monitoring in Michigan will provide a better understanding of a number of aspects of Piping Plover biology important to long-term conservation and recovery of the Great Lakes population. These activities are in direct accordance with the federal Piping Plover recovery plan objectives to determine the current distribution and population trends, and to protect, enhance, and increase Piping Plover populations during the breeding season.

LOCATION

Piping Plovers will be monitored in Emmet, Charlevoix, and Cheboygan counties; these core areas will be checked daily if birds are present. Additional assistance and banding will be provided in neighboring areas of Alger, Benzie, Leelanau, Luce, Mackinac, and Schoolcraft counties with a minimum of four visits to each site between May and August. Among areas with Piping Plover habitat but no recent record of attempted nesting, (Chippewa, Iosco, Manistee, Mason, Muskegon, and Presque Isle counties), surveys will be completed twice during the summer.

METHODS

Observations of nesting areas will begin by the first week of May and continue to the end of the breeding season (1-15 August). J. Stucker, assisted by E. Weaver will be stationed at the University of Michigan Biological Station in Pellston to facilitate regular monitoring of nests the Lower Peninsula, particularly those on private lands, and will also be available for periodic monitoring of nests in the Upper Peninsula and on the Lake Michigan islands. J. Stucker will communicate regularly with field workers at other locations (eg. Wilderness State Park, Sleeping Bear Dunes, Grand Marais, Whitefish Point Bird Observatory) to maintain detailed records of nesting activities for all sites and complete protection of all nests. She will also be responsible for banding plovers.

Ground surveys of potential nest sites will be made by walking all beaches previously identified as Piping Plover habitat. All nests located through the surveys will be protected with predator exclosures and postings, and will be monitored until chicks have fledged. Potential nest sites will be checked throughout the summer to locate late or renesting birds.

Nesting adults will be trapped on the nest and color-banded to identify and track movements and activities of individual birds. Chicks will be captured and banded as well. Captures and banding will be done according to protocol stipulated in federal and state permits. Collection of feathers will also take place according to protocol stipulated in federal and state permits.

Eggs from abandoned nests will be recovered and transported to the University of Michigan Biological Station where they will be artificially incubated. Hatched chicks will be reared in captivity and released in the wild at fledging age. Egg recovery, incubation, captive-rearing and release will be carried out by methods used since 1992 (Powell et al. 1997) in accordance with protocols outlined in federal and state permits.

Results of this study will include information on size of the breeding population, location of nest sites, breeding chronology (nest initiation, hatching, fledging), reproductive success, and assessment of failures. These results will be included in a report to all participating agencies.

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